

**FRAMEWORKS FOR GENERATION OF JAVA MACRO INSTRUCTIONS
FOR PERFORMING PROGRAMMING LOOPS**

ABSTRACT OF THE DISCLOSURE

5

Techniques for generation of Java macro instructions suitable for use in Java computing environments are disclosed. As such, the techniques can be implemented in a Java virtual machine to efficiently execute Java instructions. As will be appreciated, a Java macro instruction can be

- 10 substituted for two or more Java Bytecode instructions. This, in turn, reduces the number of Java instructions that are executed by the interpreter. As a result, the performance of virtual machines, especially those operating with limited resources, is improved. A Java macro instruction can be generated for conventional Java instruction sequences or
- 15 sequences of Java instruction that are provided in a reduced set of instruction. In any case, sequences that are frequently encountered can be replaced by a Java macro instruction. These sequences are typically encountered when Java objects are instantiated, during programming loops, and when a local variables are assigned a value.